Gibberellic Acid 83028-6

NCA Biotech, Inc.
GA_3 4%
Plant Growth Regulator Solution

ACTIVE INGREDIENT:	
Gibberellic Acid	4.0% w/w
OTHER INGREDIENTS:	96.0% w/w
TOTAL	100.0% w/w

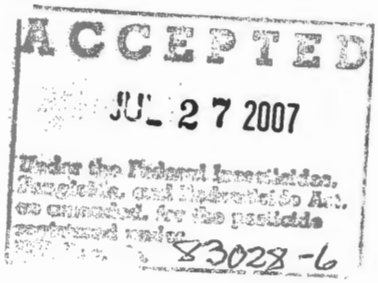
GA_3 4% contains approximately 1.0 gram active ingredient per fluid ounce of formulated product.

KEEP OUT OF REACH OF CHILDREN
CAUTION

FIRST AID	
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For general product information, call NCA Biotech, Inc. at (909) 348-5133 between the hours of 9 a.m. – 4 p.m. Pacific Time.	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.



EPA Reg. No. 83028-
EPA Est. No.

Manufactured for:
NCA Biotech, Inc.
3406 Pomona Blvd.
Pomona, CA 91768

Net Contents:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Shoes plus socks

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Exposed treated seed may be hazardous to birds and other wildlife. Dispose of all excess treated seed and seed packaging by burial away from bodies of water.

PHYSICAL OR CHEMICAL HAZARDS

FLAMMABLE! Keep away from heat and open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during applications. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

EXCEPTION: If the product is soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated areas if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, and viton.
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter without appropriate protective clothing until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE:

Keep containers tightly closed when not in use. Keep away from heat and open flame.

PESTICIDE DISPOSAL:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

Do not reuse containers. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

Use only as directed. The label should be read thoroughly and understood before making applications. Keep out of reach of children.

Do not apply this product through any type of irrigation system.

Application recommendations:

GA_3 4% contains gibberellic acid which is an extremely potent plant growth regulator; when applying plant growth regulators, follow the recommended label directions for rates, timings, and water volumes. Do not apply untested spray mixes.

- Do not apply to plants under pest, nutritional, or water stress.
- Effectiveness requires that all parts of plant or crop receive thorough spray coverage or desired result will not occur. Prepare solution concentrations by mixing the required amount of product with water in a clean, empty spray tank. Dispose of any unused spray material at the end of each day following local, state or federal law.
- For best results, use water with a neutral pH and always below 8.5.
- GA_3 4% applications made under slow drying conditions (cool to warm temperatures, medium to high relative humidity, and no wind) will increase absorption by the plant, thus optimizing effectiveness. Nighttime applications are encouraged when day-time conditions are not conducive to slow drying conditions.
- Product persistence: GA_3 4% should be re-applied if significant rain occurs within 2 hours of application.
- No preharvest interval is required for this product.
- Compatibility: The GA_3 4% spray guidelines refer to the use of the product alone. The use of surfactants and other additives has been reported to be beneficial. NCA Biotech, Inc. does not assume responsibility for unexpected results due to the tank mixing of GA_3 4% with other products.
- DO NOT apply using ULV application methods. For aerial applications use spray volumes of 2 gallons per acre or greater (10 gallons per acre for tree crops).

SPRAY INSTRUCTIONS FOR CROP CATEGORIES

GRAPE

For all grapes, apply by ground sprayer. Apply in sufficient water volume to ensure thorough wetting. It is important to wet all flower clusters or berries thoroughly. For specific spray rates and timings, by variety, see accompanying tables. Do not exceed maximum rates.

SEEDLESS GRAPE

For cluster elongation and looser cluster forms ("Stretch"). To reduce costs of thinning, allow better air circulation to aid in the control of bunch rot, and increase light penetration to aid in sugar development:

Guide: Apply one to three applications before bloom when flower clusters are 2-to-7 inches long.

For decreased berry set ("Thinning"), reduced hand-thinning costs, and hastened maturity:

Guide: Apply one to four applications during bloom. Make only 1-to-2 applications for "Other Seedless Grapes". When the bloom period is extended, make subsequent sprays 1-to-7 days after the first application.

NOTE: Higher amounts or multiple applications cause an excess of shot berries or overthinning, especially in young vines or vines with high vigor. For "Other Seedless Grapes", new cultivars are very responsive and are over-thinned easily. Consult a local specialist before thinning unfamiliar cultivars.

To help initiate the beginning of the berry growth period in Thompson Seedless variety "bump spray": Guide: Apply 16-to-24 grams a.i./acre as a single application during the period between the last thinning spray and the first sizing spray.

For larger berries ("Sizing") and larger clusters when used in conjunction with established girdling and thinning practices:

Guide: Apply one to four applications beginning when the average berry size reaches "target" diameter (See Table 1). Timing of the subsequent sprays is dictated by experience in the vineyard and temperatures occurring between sprays. Potential effect is reduced if the final spray occurs more than two weeks after the first application. Consult a local specialist before sizing unfamiliar cultivars.

TABLE 1 Application Rates (Grams A.I./Acre) for Seedless Grape, Including Target Berry Diameters

Seedless Grape	Stretch	Thinning	Sizing	
	grams a.i./acre	grams a.i./acre	"Target" Diameter	grams a.i./acre
Perlette	8-to-24	*	4-to-5 mm	32-to-128
Flame	8-to-24	3-to-16	6-to-9 mm	20-to-128
Thompson	8-to-24	8-to-20	3-to-5 mm	32-to-128
Raisin	8-to-24	3-to-12	3-to-5 mm	4-to-20
All Other Seedless Grape	*	0.5-12	3-to-14 mm	8-to-60

*No recommendations available for this variety/timing at this time.

NOTE: High amounts of gibberellic acid reduces fruitfulness (cluster counts) the following year and delays berry skin color development, sugars accumulation and overall maturation.

SEEDED GRAPE

Emperor Grape

For reducing berry shrivel. This can also increase berry size:

Guide: Make applications as a whole vine spray, or as a spray or dip directly to the cluster.

Whole vine spray - Apply 20 grams a.i./acre as one application when the predominant berry diameter is 12-16 mm.

Directed spray to grape clusters or cluster dip – Prepare a spray solution of 40 to 50 ppm (16 to 20 grams a.i. per 100 gallons water) and apply as a direct spray to clusters or dip the clusters.

NOTE: Whole vine application reduces fruitfulness (cluster counts) the following year. High amounts of gibberellic acid may also delay berry skin color development, sugars accumulation and overall maturation. Consult a local specialist before sizing unfamiliar cultivars.

Red Globe, Calmeria, Christmas Rose, Rogue and Queens

To increase berry size:

Guide: Make application as a whole vine spray, or as a spray or dip directly to the cluster.

Whole vine spray – Apply 20 grams a.i./acre as one application when the average berry size reaches the "target" diameter (See Table 2).

Directed spray to grape clusters or cluster dip – Prepare a spray solution of 40 to 50 ppm (16 to 20 grams a.i. per 100 gallons water) and apply as a direct spray to the cluster only or dip the clusters.

NOTE: Whole vine application reduces fruitfulness (cluster counts) the following year. High amounts of gibberellic acid delays berry skin color development, sugars accumulation and overall maturation. Consult a local specialist before sizing unfamiliar cultivars.

TABLE 2 Application Rates for Seeded Grapes, Including Target Berry Diameters

Seeded Grape	"Target" Diameter	Whole Vine Spray (grams a.i./acre)	Direct Spray to Cluster or Cluster Dip (rate in ppm of a.i.)
Emperor	12-16	20	40-50
Red Globe	12-18	20	40-50
Calmeria	12-16	20	40-50
Christmas Rose	12-16	20	40-50
Rogue	12-16	20	40-50
Queens	12-15	20	40-50

Black Corinth (Zante Currant) Grape

For improving berry size:

Guide: Apply 1-to-12 grams a.i./acre as one application 3-to-5 days after full bloom, but before shatter begins.

Wine Varieties

To increase cluster length, improve air circulation and light penetration within the cluster and help to reduce the incidence of bunch and sour rot:

Guide: Apply one spray when clusters found in the dominant shoots arising from buds on count spurs are starting to elongate, average 3-to-4 inches in length, and show separation of the uppermost flower groups. Use 100 gallons of water per acre. Concentrations for registered varieties are shown below (See Table 3).

NOTE: Do not make applications less than three weeks before bloom. IT IS IMPORTANT that the proper rate be used on each variety; if late applications are made or if indicated rates are exceeded, reduction in yield may occur during the year of application and subsequent years. This reduction in yield may result from an increase in shot berries in the year of application and reduction in fruitfulness (cluster counts) in the first and second year following application. If growers have no experience with this application, consult local agricultural specialists before making this application.

TABLE 3 Application Rates (Grams A.I./Acre) and Recommended Water Volume on Seeded Wine Varieties.

Variety	Grams a.i./acre	Gallons/acre
Palomino Sauvignon Blanc Tinta Madeira	0.4-to-1	100
Aleatico Carignane Chardonnay Chenin Blanc French Colombard	1-to-2	100

Variety	Grams a.i./acre	Gallons/acre
Pinot Noir Valdepenas		
Barbera Petite Sirah Zinfandel	2-to-4	100
Green Hungarian	4-to-8	100
Grenache Alicante	8	100
Salvadore	8-to-16	100

CITRUS

For all citrus, apply in sprays of sufficient water volumes to ensure thorough fruit wetting. Do not apply to trees of low vigor or under stress (pest, nutritional, or water, etc.) to avoid severe leaf and/or fruit drop. In most cases, some drop of older mature leaves will occur after application. Do not apply in white wash sprays in which lime or other caustic material has produced a high pH in the spray tank. Do not make applications of copper fungicides and/or oils within three weeks (before or after) application of GA_3 4% to avoid significant leaf and fruit drop.

NAVEL ORANGE

To delay rind aging, reduce physiological disorders (e.g., rind staining, water spotting, sticky or tacky surface, puffy rind and rupture under pressure), and to produce a more orderly harvesting pattern. The delay in rind aging is greatest when an early spray is applied. This spray timing produces the firmest rind possible:

Guide: Apply 16-to-48 grams a.i./acre in sufficient water volume to ensure thorough wetting.

EARLY SPRAY: Apply one spray approximately two weeks prior to color break, which normally occurs August through November.

AND/OR

LATE SPRAY: Apply one spray after marketable color has developed, normally from October through December.
This late application may cause fruit re-greening.

NOTE: Do not apply the early spray to groves that are harvested early, as fruit coloring will be delayed. Do not apply from January through July, as production will be reduced the following year. Expect slower color development in the target crop. After marketable color is achieved, treatment effects will be reduced the longer treated fruit remains on the tree.

(For Florida Use Only)

To enhance fruit set and yield:

Guide: Make a single application of 15-to-25 grams a.i./acre during December or January in 125-to-175 gallons of water per acre. Use a pure organo-silicone type surfactant at 0.05% (6 fl. oz./100 gallons).

VALENCIA ORANGE

(For California and Arizona use only)

To reduce rind creasing and to delay rind aging and softening:

Guide: Apply a single spray in August to October to trees with a target crop of young fruit. Apply 40-to-80 grams a.i./acre in sufficient water volume to ensure thorough wetting.

NOTE: Do not apply the early spray to groves that are harvested early, as fruit coloring will be delayed. Do not apply from January through July, as production will be reduced the following year. Expect slower color development in the target crop. Increased re-greening of mature fruit may occur. After marketable color is achieved, treatment effects will be reduced the longer treated fruit remains on the tree.

(For Florida Use Only)

To enhance fruit set and yield:

Guide: Make a single application of 15-to-25 grams a.i./acre during December or January in 125 to175 gallons of water per acre. Use a pure organo-silicone type surfactant at 0.05% (6 fl. oz./100 gallons).

OTHER ROUND ORANGES
(For Florida Use Only)

To reduce rind creasing and puffiness, and to delay aging and softening of the rind:

Guide: Apply a single spray in August to October to trees with a target crop of young fruit. Apply 20-to-60 grams a.i./acre in sufficient water volume to ensure thorough wetting. Use a pure organo-silicone type surfactant at 0.05% (6 fl. oz. in 100 gallons).

AMBERSWEET ORANGE
(For Florida Use Only)

To enhance fruit set and yield:

Guide: Make a single application of 15-to-25 grams a.i./acre during January in 125-to-175 gallons of water per acre with a pure organo-silicone type surfactant at 0.05% (6 fl. oz./100 gallons).

LEMON/LIME

To decrease the amount of small ripe fruit and to produce a more desirable production pattern relative to market demand:

Guide: Apply one spray when target crop is ½-to-3/4 full size, but still green. Use 10-to-32 grams a.i./acre in sufficient water volume to ensure thorough wetting.

When applied two years in a row, an even larger difference in harvest pattern and maturity occurs.

TANGERINE HYBRIDS

To delay disorders associated with rind aging, puffiness, and softening, and to increase peel strength of tangerine hybrids such as Orlando, Robinson, Minneola and Sunburst:

Guide: Apply 20-to-40 grams a.i./acre approximately two weeks prior to color break. Apply in sufficient water volume to ensure thorough wetting.

NOTE: Do not apply if early harvest is planned. Do not apply after coloring as preharvest rind staining may occur. Application during coloring may cause variation in rind color of development.

(All States except California)

To increase fruit set and yields on tangerine hybrids with pollination problems such as the Orlando, Robinson, Minneola and Sunburst:

Guide: Apply 8-to-30 grams a.i./acre during full bloom. Make one to two applications. Apply in sufficient water volume to ensure thorough wetting.

NOTE: Expect reduced fruit sizes and slightly retarded color development. A slight increase in mature leaf drop will occur in trees under stress.

GRAPEFRUIT
(All States except California)

To delay disorders associated with rind aging (e.g., puffiness, softening, and orange coloration), to prevent preharvest drop of mature fruit, to increase peel strength and reduce water loss during storage, and to produce a more orderly harvesting pattern. The delay in rind aging is greatest when an early spray is applied before color change. This spray timing produces the firmest rind possible:

Guide: Apply 16-to-48 grams a.i./acre in a minimum of 250 gallons per acre.

EARLY SPRAY: Apply one spray approximately two weeks prior to color break, which normally occurs August through September.

AND/OR

LATE SPRAY: Apply one spray after marketable color has developed which is normally from October through December.
This late application may cause fruit re-greening.

NOTE: Do not apply the early spray to groves that are harvested early as fruit coloring will be delayed. Spot pick heavy crops to aid early marketing and to avoid reduction of yields, which generally follow late held crops. Fully colored fruit to which applications have been made will begin to re-green if allowed to remain on the tree for extended periods.

Application made after December, or when trees begin to break dormancy, will adversely affect new crop. Do not use concentrate sprays. Results vary from season to season depending on environmental conditions.

To enhance fruit set, size and yield:

Guide: Make a single application of 15-to-25 grams a.i./acre during December or January in 125-to-175 gallons of water per acre with a pure organo-silicone type surfactant at 0.05% (6 fl. oz./100 gallons).

GRAPEFRUIT, STAR RUBY VARIETY
(All States except California)

To reduce early-season small fruit drop of Star Ruby Variety thereby increasing yields:

Guide: Apply a single spray during the bloom period. Use 25-to-35 grams a.i./acre in a minimum of 250 gallons of water per acre.

NOTE: Results vary from season to season depending on environmental conditions. Maintain a well-balanced fertilization and watering program.

CLEMENTINE MANDARIN

To increase fruit set and yield:

Guide: Make one to two applications of 1-to-8 grams a.i./acre in sufficient spray volume to ensure adequate coverage of tree canopy. Make applications from 50% petal fall up to three weeks after petal fall.

NOTE: The number of applications depends upon the desired amount of fruit set. Generally, more fruit will be set by 2 applications, earlier applications, higher rates, and climactic conditions more favorable to set. Differences in crop strain interact with the above factors to affect the degree of fruit set achieved. Reductions in final fruit size can occur as a result of excessive fruit set.

POSTHARVEST APPLICATIONS

LEMON

To delay fruit senescence and prolong storage life:

Guide: Add 2 to 4 fl. oz. of GA_3 4% (2 to 4 grams of a.i.) in 10 gallons of storage wax which has been diluted as per the wax label instructions. The incidence of sour rot is reduced by delaying senescence.

YELLOW LEMONS AND OTHER MATURE CITRUS FRUIT

To delay rind senescence and color changes:

Guide: Add 2 to 4 fl. oz. of GA_3 4% (2 to 4 grams of a.i.) in 10 gallons of storage wax which has been diluted as per the wax label instructions. The incidence of sour rot is reduced by delaying senescence.

FRUIT CROPS

BANANA

To stimulate plant growth and overcome the effects of stress caused by insects, disease or adverse weather:

Guide: Apply 1-to-6 grams a.i./acre by ground or aerial application in sufficient water volume to adequately cover foliage. Make applications once every 30 to 90 days throughout the year. Make more frequent applications (monthly) for 6 months prior to anticipated weather stress periods.

BLUEBERRY
(All States Except California)

To improve fruit set. For natural fruit set problems due to insufficient natural honeybee pollination, adverse weather conditions, or physiological factors.

Highbush blueberry – (for varieties such as Coville, Jersey, Stanley, Earliblue, Weymouth, Walcott, Berkeley, Blueray, Bluecrop, 1316A, Concord, and others).

Guide: Make one or two applications in 40 to 100 gallons of water. If a single application is made, apply 80 grams a.i./acre at full bloom (when 75% of the flowers are fully open). When 2 applications are made, apply 40 grams a.i./acre per application. Make the first application at full bloom, and the second one within 10-14 days of the first one. For Weymouth, delay application up to two weeks after bloom to increase size of "shot" berries.

Rabbiteye blueberry – (for varieties such as Aliceblue, Beckyblue, Bonita, Brightwell, Climax, Delite, Tiftblue, Woodward, and others).

Guide: Make a single application of 40 grams a.i./acre in 100-to-300 gallons of water per acre when most of the flowers are elongated but not yet open (bloom Stage 5).

OR

MULTIPLE APPLICATIONS: Make two to four applications 10-to-14 days apart starting at bloom Stage 5. Spray 20-to-40 grams a.i./acre in 40-to-100 gallons of water per application.

SWEET CHERRY

To produce larger, brighter colored, firmer fruit:

Guide: Apply a single spray when the fruit is light green to straw colored. Use 16-to-48 grams a.i./acre in sufficient water volume to ensure thorough wetting.

NOTE: Color development and harvest will be slightly delayed.

RED TART CHERRY
(All States except California)

To maintain and extend high fruiting capacity of bearing tart cherry trees and reduce the occurrence of "blind" nodes. Treatment will cause bud differentiation, which is apparent the year after application. Therefore, changes in shoot, spur, and flower production will not be evident until two or three years after program initiation. Make annual applications to ensure vegetative development and subsequent yield improvement year after year.

Guide: Apply one spray 14-to-28 days after bloom. Optimum timing is defined as that stage when 3-to-5 terminal leaves have fully expanded, or, at least 1-to-3 inches of terminal shoot extension has occurred. Use 4-to-18 grams a.i./acre, depending on tree age and vigor (See Table 4). Apply in sufficient water volume to ensure thorough wetting.

TABLE 4 Recommended Application Rates (Grams A.I./Acre) for Tart Cherry Trees by Age

Tree Age (years)	Rate (grams a.i./acre)
6-to-10	4-to-6
11-to-15	8-to-10
16-to-20	11-to-14
20 + years	14-to-18

NOTE: Rates are based on expected normal tree vigor at various ages. Adjust rate according to tree vigor. If trees are vigorous, use lowest recommended rates. Use lowest rates on trees that have been heavily pruned or hedged. Use higher rates for trees low in vigor and weak in shoot and spur production. Excessive application rates will increase vegetative growth at the expense of fruit production the following year.

Applications will not improve growth of trees under stress conditions, such as nutritional, moisture, or pest. Best results are obtained when combined with good cultural practices.

STONE FRUIT GROUP

To improve fruit quality and increase firmness in the season of application:

Guide: Apply a single spray of 16-to-32 grams a.i./acre in sufficient water volume to achieve complete coverage of fruits and foliage. Make application one to four weeks prior to the beginning of harvest.

NOTE: This application causes reduction in flower counts the year following application, particularly if application is made during the months of May through July.

ITALIAN PRUNE
(All States except California)

To reduce internal browning, improve quality, and increase size:

Guide: Apply 4-to-5 weeks before expected harvest. Apply a single spray at 16-to-48 grams a.i./acre in sufficient water volume to ensure thorough wetting.

NOTE: Color development and harvest will be slightly delayed. May reduce bloom the following season.

NON-BEARING FRUIT TREES

(All States except California) *To reduce flowering and fruiting in young stone fruit trees in order to minimize the competitive effect of early fruiting on tree development:*

NOTE: DO NOT SPRAY TREES IN THE FIRST YEAR. Treat in the second season for reduction of flowering in the third season, and again in the third season if a reduction of

flowering and fruiting is desired in the fourth season. Treat only trees that are in good physiological condition. Discontinue treatment the year before desired harvest.

Guide: Apply a single application of 20-to-80 grams a.i./acre during the period of flower bud initiation for the following year. Use sufficient water to achieve good coverage of the canopy. A local horticulturist can provide timings and rates for specific cultivars in your area.

OTHER FRUIT

STRAWBERRY
(All States except California)

To increase runner production of mother plants:

Guide: Apply a single spray of 15-to-25 grams a.i./acre to mother plants 10-to-30 days after planting when plants have 1-to-6 leaves. Apply 100 gallons spray/acre to thoroughly wet new foliage to the point of run-off.

NOTE: Not for use on fruiting plants. Treatments will not be effective on plantings set out after mid-May. Response varies with cultivar and location. Consult a local horticulturist for specific information in your area.

CRANBERRY
(All States except California)

To reduce or eliminate crop in the year of application:

Guide: Make a single application of 10-to-50 grams a.i./acre at early bloom (2-5% scatter bloom) in sufficient water volume to ensure thorough coverage.

NOTE: Applications made later than the early bloom stage will have no effect or result in increased fruit set. Responses vary with cultivar, age of the bog and location. Consult a local specialist for specific information in your area.

VEGETABLE CROPS

ARTICHOKE

To accelerate maturity and shift harvest to an earlier date:

Guide: For perennials, apply one to three applications at bud initiation stage. For annuals, apply one to four applications at 2-week intervals, beginning at the fourth true leaf. Use 10-to-20 grams a.i./acre per application in sufficient water volume to ensure thorough wetting of the entire plant (leaves, stems and buds).

CARROT

To delay leaf senescence: Maintaining vigorous foliage may reduce the incidence of infection by *Alternaria dauci.*

Guide: Make the first application 4-to-6 weeks after emergence using ground or aerial spray equipment with spray concentrations of 20-to-30 ppm. A second spray 14 days later may be required to achieve the desired amount of foliar recovery in severe disease situations or cool weather. Do not apply more than twice per crop.

NOTE: Dilutions of greater concentration increase the risk of excessive top growth, particularly with a second application.

CELERY

To increase plant height and yield and overcome stress due to cold weather conditions or saline soils, and to obtain earlier maturity:

Guide: Apply a single spray one to four weeks prior to harvest at a rate of 2.5-to-10 grams a.i./acre. Use 25-to-50 gallons of water per acre by ground application or 5-to-10 gallons of water per acre for aerial application*. Use lower concentrations applying 3-to-4 weeks before harvest and higher concentrations within 1-to-2 weeks before harvest.

*Do not apply by air in California.

NOTE: Do not apply earlier than 4 weeks before harvest as bolting (seed stalk formation) may occur.

LETTUCE FOR SEED

To obtain uniform bolting and increase seed production:

Guide: Apply one to four applications at 2-week intervals, beginning at the fourth true leaf. Use 1-to-4 grams a.i./acre per application in sufficient water volume to ensure thorough wetting.

PEPPER
(All States except California)

To Promote Plant Growth:

Guide: Apply one to two sprays of 1-to-3 grams a.i./acre in 25-to-50 gallons of water per acre at two-week intervals. Begin sprays 2 weeks after transplanting.

NOTE: This use is for areas with short growing seasons, or when low temperatures slow plant growth.

To Increase Fruit Set and Promote Fruit Growth:

Guide: Apply one to two sprays of 1-to-3 grams a.i./acre in 25-to-50 gallons of water per acre at weekly intervals during the flowering period. The high rate is suggested for areas and/or varieties with pollination and/or fruit set problems.

To Increase Fruit Size:

Guide: Apply 1-to-3 grams a.i./acre in 25-to-50 gallons of water per acre at the beginning of the picking period. The high rate is for plants with heavy fruit loads.

MELON AND CUCUMBER
(All States except California)

To stimulate fruit set during periods of cool temperatures:

Guide: Use 1-to-4 grams a.i./acre in sufficient water volume for thorough coverage of exposed foliage. Make one application prior to bloom followed by two additional applications at intervals of 10-to-14 days on cantaloupes and watermelons. On cucumbers, up to four applications are required.

For maximum benefits, vines in good condition are required, except for reduced rate of growth due to cool temperatures.

RHUBARB

To break dormancy on plants receiving insufficient chilling and to increase marketable yield of forced rhubarb:

Guide: Make a single application of 2 fluid ounces (60 ml) of a solution containing 20 grams a.i. in 10 gallons of water to each cleaned crown, when the rest period is not completely broken. When the rest period is broken by cold weather, apply 2 fluid ounces (60 ml) of a solution containing 10 grams a.i. in 10 gallons of water to each cleaned crown.

NOTE: Keep forcing house temperatures at 40° F-to-50° F for 24 hours after application. If house is warmer than 50° F, cover the crowns with plastic. Temperatures in the forcing house above 50° F may lower yields and cause poor stalk color.

SEED POTATO

To stimulate uniform sprouting to aid in maximum production, more uniform development, fewer late maturing plants, and to break dormancy of newly harvested potatoes that have not had a full rest period.

Guide: Dip whole or cut seed pieces in a solution containing 0.2-to-0.4 grams a.i. in 100 gallons of water prior to planting.

NOTE: Under high soil temperatures use the minimum concentration for dormant seed. Do not treat rested seed pieces.

SPINACH
(All States except California)

To facilitate harvest, increase yield and improve quality of fall and over-winter spinach.

Guide: Apply a single spray 10-to-18 days before each anticipated harvest on fall or over-winter spinach, ideally when daytime temperatures are 40° F-to-70° F and during early morning hours when dew is present on crop. Apply 6-to-10 grams a.i./acre in 10-to-50 gallons of water per acre by ground sprayer or in a minimum of 5-to-10 gallons of water per acre by air. When applied to promote growth of second cutting, wait until some regrowth has started before spraying. Maximum benefit is obtained when below normal temperatures predominate following application and growth is otherwise slowed in untreated spinach.

NOTE: Since the promotion of bolting may occur, do not apply after the mid-winter period or if temperatures are expected to exceed 75° F within several days of application. Do not apply on spring plantings.

ORNAMENTAL CROPS, CUT FLOWERS AND TURFGRASS

The following suggestions are based on results with common cultivars. Differences in responsiveness vary between cultivars, growing conditions, and cultural management systems. Therefore, prior to widespread usage, test a small number of plants from each cultivar under a specific set of growing and cultural management conditions to verify desired efficacy.

When applying foliar applications of GA_3 4%, spray plants to run-off. The actual spray application rate will vary, depending on plant size and spacing density. Thorough spray coverage is essential for uniform flowering.

NOTE: A representative spray application rate which has been proven effective for 6 inch potted plants spaced at a density of 1 per square foot is 1-gallon spray solution/200 square feet.

ORNAMENTALS

AZALEA

As a partial replacement of cold treatment to break flower dormancy:

Guide: Apply three sprays of 250-to-500 ppm a.i. (See Table 5) at weekly intervals after 3-to-4 weeks of chilling. Plants should be at Stage 5 of floral development (i.e., style elongated and open) when treatment is initiated. A representative spray schedule would consist of applications made at 3, 10, and 17 days after four weeks of chilling. Flowers will not develop properly if applied prior to Stage 5.

NOTE: Thorough spray coverage is essential for uniform flowering. Do not apply after flower buds show color. On some cultivars (e.g., 'Gloria', 'Prize', and 'Redwing'), a single spray of 1000-ppm a.i. after 4 weeks of chilling has proven effective in breaking dormancy.

As a complete substitution of cold treatment to break flower dormancy:

Guide: Apply four to six sprays of 1000-ppm a.i. (See Table 5) at weekly intervals. Apply first spray when plants are at Stage 5 of floral development (style elongated and open). Flowers will not develop properly if applied prior to Stage 5 of floral development.

NOTE: Thorough spray coverage is essential for uniform flowering. Do not apply after flower buds show color.

To inhibit flower bud initiation during vegetative growth:

Guide: After each pinch, apply two to three sprays of 100-to-750 ppm a.i. (See Table 5) at intervals of 2-to-3 weeks. Continue applications on a weekly basis for 1-to-2 weeks after the first application.

NOTE: Apply a maximum of three applications.

Use Table 5 to convert spray concentrations (ppm of a.i.), to actual number of fluid ounces of GA_3 4% needed for one gallon of spray solution.

TABLE 5 Application Rates and Recommended Water Volume for Azalea

Desired ppm value	grams a.i./gallon*	grams a.i./acre**	Fl. Oz. of GA_3 4%/acre**
100	0.38	87	87
250	0.95	207	207
500	1.90	414	414
750	2.85	610	610
1000	3.80	828	828

*Note: GA_3 4% is a liquid. Each fluid ounce contains approximately one (1) gram of active ingredient.
**Based on a spray application rate of 1 gallon of spray solution/200 square feet.

CALLA LILY

For increased flowering:

Guide: Soak rhizome or tuber in a 500 ppm solution of GA_3 4% for 10 minutes prior to planting.

NOTE: Flower or leaf stretching occurs in some cultivars. Reduce rates if this occurs.

CAMELIA

For substitution of chilling requirements and to increase bloom size:

Guide: Prepare a 2.0% solution of GA_3 4% by mixing equal volumes of product and water. Remove the vegetative bud immediately adjacent to or below the floral bud. Place a single drop of the prepared solution to the vegetative bud scar.

NOTE: Adding a deposition aid (such as carboxymethylcellulose) to thicken the solution will decrease run-off.

CYCLAMEN

For uniform flowering:

Bud Application – Apply 8 ml (0.25 fl. oz.) of a 10-to-15 ppm solution directly to the crown when buds are pinhead size in the leaf axils.

Foliar Application – Apply a single foliar application of 25 ppm directly toward the crown and adjacent leaves when buds are pinhead size in the leaf axils. Thoroughly wet the crown.

NOTE: Both bud and foliar applications have been shown to promote uniform flowering. Late or excessive applications result in weakened floral stems or poorly formed flowers.

FUCHSIA

To produce tree forms of common fuchsia cultivars by stem elongation:

Guide: Apply a single foliar application of 250 ppm for four consecutive weeks. Begin applications after the plant has reached the desired size. Spray the entire plant to the point of run-off.

NOTE: Staking is required after treating plants. Concentrations higher than 250 ppm may cause plants to become stretched and spindly, with weakened stems.

GERANIUM

Cuttings - *To increase flower number and size of geranium cuttings:*

Guide: Apply a single foliar application of 1-to-5 ppm when inflorescence first begins to show color. Direct spray at the developing inflorescence.

NOTE: Concentrations above 5 ppm or treatments prior to inflorescence showing color cause peduncle stretching.

Seedlings – *To advance flowering:*

Guide: Make a single foliar application of 5-to-15 ppm when first flower bud set is noted. Spray the entire plant to the point of run-off.

NOTE: Incorrect timing or concentrations above 15 ppm cause plant stretching.

Tree Forms – *To produce tree forms of common geranium cultivars by stem elongation:*

Guide: Make a single foliar application of 250 ppm for four consecutive weeks. Spray the entire plant to the point of run-off.

NOTE: Plants require staking after treatment.

HYDRANGEA

To substitute for chilling requirements to break flower bud dormancy:

Guide: Apply a single foliar application of 2-to-5 ppm for one to four consecutive weeks. Begin applications at the start of forcing. Thoroughly cover all growing points containing flower buds.

NOTE: Overuse or concentrations above 5 ppm may result in stretched, spindly, and weak stems.

POMPOM CHRYSANTHEMUM

For elongating peduncles on Pompom chrysanthemum.

Guide: Apply a single foliar application of 25-to-60 ppm 4-to-5 weeks after initiation of short day conditions. Apply directing the spray solution towards the flower buds.
NOTE: Overuse of incorrect timing may cause long, spindly, and weak stems.

SPATHIPHYLLUM

To accelerate bloom and increase the number of flowers per plant:

Guide: Make a single foliar application of 150-to-250 ppm approximately 9-to-12 weeks prior to the expected sale date. Spray to the point of run-off and thoroughly wet all growing points.

NOTE: Flower distortion or leaf stretching may occur on some cultivars such as 'Petite', 'Starlight', 'Tasson', and 'Mauna Loa'. Reduce rates if this occurs. On other cultivars, prior to application on a commercial basis, evaluate the effects of GA_3 4% on a small number of plants.

AGLAONEMA, ANTHURIUM, DIFFENBACHIA (Dumb Cane) AND SYNGONIUM

To accelerate bloom and increase the number of flowers per plant:

Guide: Apply a single foliar application of 250-to-500 ppm a.i. for one to four consecutive weeks beginning at the start of forcing for Aglaonema, Anthurium and Dieffenbachia. Apply a single foliar application of 500-to-2000 ppm a.i. for one to four consecutive weeks beginning at the start of forcing for Syngonium. Thoroughly apply solution to all growing points containing flower buds.

NOTE: Application of GA_3 4% can increase flower yield and decrease time to flowering. Make 1 or 2 applications during the vegetative phase of plant development to induce bloom. On other cultivars, prior to application on a commercial basis, evaluate the effects of GA_3 4% on a small number of plants.

CUT FLOWERS

Apply GA_3 4% to ornamental plants grown for cut flowers to promote stem elongation and flowering. GA_3 4% is very active and application at excessive rates results in undesirable effects. Evaluate the effects of GA_3 4% on a small number of plants prior to application on a widespread basis.

ASTER

Monte Carlo-type, Novi-type and Belgi-type – *To promote stem elongation and break dormancy:*

Guide: Make 1-to-3 applications of 50-to-100 ppm during the early vegetative period when plants are 2" to 6" tall. Make applications at 2-to-3 week intervals.

BABY'S BREATH (Gipsophila)

To accelerate plant growth, increase flower yield and uniformity:

Guide: Make 3-to-4 applications of 150-to-500 ppm a.i. solution at 4 weeks of growth (after pinching). Make applications at 2-week intervals.

BELLS OF IRELAND (Moluccella)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

BUPLUREUM

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

CAMPANULA

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

CANDY TUFT (Iberis)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

COLUMN STOCK (Matthiola)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

DELPHINIUM

Including: *D. elatum, D. grandiflorum, D. belladonna, D. cardinale, D. nudicale,* and Delphinium hybrids - *To promote plant growth and stem elongation:*

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

DIDISCUS (Trachyme)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

HYDRANGEA

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

LARKSPUR

Consolida ambigua, C. orientalis, Delphinium ajacis - To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

LISIANTHUS (Eustoma)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

PHLOX

Phlox paniculata and Drummondi hybrida - To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

QUEEN ANNE'S LACE (Ammi)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

SAFFLOWER

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

SOLIDASTER

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

STATICE

To promote earlier flowering and to increase flower yield:

Guide: Apply as a foliar spray consisting of 10 ml (0.33 fl. oz.) of a 400-to-500 ppm a.i. solution to each plant when plants are 10 inches or more in diameter (approximately 90-to-110 days after normal seeding time).

NOTE: Do not exceed specified rates. Do not apply repeated sprays. Accelerated flowering is influenced by extended photoperiod, adequate nutrition, and reduced night temperatures. This treatment reduces the cold requirement and/or the long photoperiod.

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

SUNFLOWER

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

SWEET WILLIAM (Dianthus)

To promote plant growth and stem elongation:

Guide: Apply a 50-to-100 ppm a.i. solution as a foliar spray when plants are 4" to 8" tall. Make applications at 2-to-3 week intervals.

TURF

(Golf Courses, Parks and Turf Farms)

Application of GA_3 4% to Bermudagrass grown in golf courses, parks and turf farms has been shown to initiate or maintain growth and prevent color change during periods of cold stress.

NOTE: Do not exceed specified rates. Maintain adequate moisture and proper fertilization programs for your local area. Keep high rate applications at least 2-weeks apart. Do not use on dormant turf. Stop treatments if thinning is observed. More frequent mowing may be necessary.

Cool Weather Application

BERMUDAGRASS (Tidwarf, Tifgreen, and other cultivars)

To initiate or maintain growth and prevent color change during periods of cold stress and light frosts:

Guide: Apply 10 grams a.i./acre weekly or 25 grams a.i./acre biweekly in 25-to-100 gallons of water/acre.

Warm Weather Application

BERMUDAGRASS (Tidwarf, Tifgreen, and other cultivars)

To maintain or enhance regrowth of golf course Bermudagrass during summer months:

Guide: Apply 1-to-3 grams a.i./acre weekly in 25-to-100 gallons of water/acre.

BEDDING PLANTS, ANNUAL AND PERENNIAL POTTED CROPS, FIELD GROWN ORNAMENTALS AND BULB CROPS

To promote plant growth and/or overcome the effects of overuse of a gibberellin-inhibiting plant growth regulator:

Guide: Apply a single application of 1-to-25 ppm a.i. solution directly to plant foliage. When applying GA_3 4% to promote plant growth, start with a 1 ppm a.i. solution unless previous experience dictates a higher rate is warranted. If desired results are not achieved, a reapplication or higher rate is necessary.

NOTE: GA_3 4% is very active and excessive application rates result in undesirable stem elongation. Do not use more than 25 ppm a.i. Evaluate the effects of GA_3 4% on a small number of plants prior to application on a widespread basis.

OTHER CROPS

HOPS
(Northwestern U.S. only)

For seeded and seedless Fuggle hop and similar varieties adapted to the Northwestern states.

To increase yield and fruit set:

Guide: Apply a single spray when vine growth is 5-to-8 feet in length. Use 4-to-6 grams a.i./acre in 100-to-150 gallons of water/acre.

COTTON

To promote early plant growth and increase early seedling vigoron young cotton plants:

Guide: Apply 1-to-6 grams a.i./acre via in-furrow application to seed, or as a foliar application from the cotyledon stage through the 7-leaf/node stage. Repeat applications to a maximum of 3 applications.

NOTE: Use higher rates when temperatures will likely average 75° F or less during the 14 days following the applications. Do not tank mix with herbicides. Do not apply to cotton plants under drought stress. If cotton plants are under continuous stress, delay application until the stress is alleviated and plants are beginning to recover. Do not apply more often than necessary to achieve the desired height, as overdosage results in excessive growth.

Mixing Instructions

Fill the treatment tank with half of the final tank mix volume. Add the required amount of GA_3 4% and mix thoroughly while adding water to the desired final volume. Dispose of any unused spray material at the end of the day.

Application Equipment

Apply GA_3 4% by aerial or ground spray equipment. As an aerial spray, use a spray system capable of producing a uniform spray pattern of medium to fine spray droplets at 10 gallons per acre (GPA). Apply no less than 3 GPA of total spray volume. Low-pressure ground sprayers equipped with boom and flat fan nozzles using 10 to 15 GPA spray volume may be used.

Compatibility with Other Chemicals

Compatibility information regarding tank mixtures of GA_3 4% with herbicides used in cotton is not available.

GRAIN SORGHUM
(All States except California)

For use as a seed treatment to break dormancy and allow germination under cold soil conditions:

Guide: Apply 0.25 to 1.00 grams a.i. per 100 pounds of seed. GA_3 4% can be applied to dry seed with standard mist-treating equipment. Make certain the seed is completely and uniformly covered with GA_3 4%. Fill the seed treatment tank with water to one-half the final tank mix volume. Add the required amount of GA_3 4%, mixing thoroughly while adding water and other seed treatment products to the desired final volume.

DO NOT USE TREATED SEED FOR FOOD, FEED OR OIL PURPOSES. Add an approved dye to distinguish GA_3 4% treated seed and prevent inadvertent use for food, feed or oil purposes. Seed commercially treated with this product must be labeled in accordance with all

applicable requirements of the federal and state seed laws. GA_3 4% is compatible with most commonly used fungicide seed treatments such as Vitavax® and Dithane®, standard dyes and sticker-binding agents. When preparing tank mixes, ensure adequate physical compatibility and mixing characteristics.

RICE

FOLIAR APPLICATION

Early season foliar application of GA_3 4% promotes vigorous and more uniform seedling growth of rice prior to permanent flood establishment. This may permit earlier flooding (5 to 10 days earlier) of drill or broadcast-seeded rice and is particularly effective on semi-dwarf varieties. Early flooding may reduce the additional flushing costs associated with a delay in establishing the permanent flood, reduce weed infestations and the number of herbicide applications, and/or promote earlier and more uniform grain maturity.

Late season foliar applications of GA_3 4% between split-boot and 100% heading increases panicle height of rice. This may facilitate harvest efficiency in the field by allowing the rice grain to be cut above the leaf canopy at faster combine speeds and at reduced vegetative load. Grain quality and maturity are advanced with the promotion of tiller panicle development. Heading applications to the first crop accelerates regrowth of second crop rice. This results in earlier second crop maturity and maximized grain yield.

Timing and Rate Recommendations

Seedling Applications (Early Season)

Apply GA_3 4% at a rate of 1 to 3 fl oz (30 to 90 ml) of product per acre to rice between the 1-2 and 4-5 leaf stages of growth. Timing and dosage is based upon environmental conditions, tank mix combinations with herbicides, and preferred permanent flood practice in relation to rice leaf stage.

For best results, apply GA_3 4% at a rate of 1 to 2 fl oz (30 to 60 ml) of product per acre using either a non-ionic surfactant known to be non-phytotoxic to rice or in tank mix combination with rice herbicides (See Compatibility with Other Chemicals section). Use higher rates of 1.5 to 3 fl oz (45 to 90 ml) of product with some dry and water-based herbicide formulations, or when temperatures will likely average 75°F or less during 14 days after application.

NOTE: Do not apply when rice is subjected to drought stress conditions. Foliage may temporarily appear lighter green in color due to accelerated growth rates following GA_3 4% application.

Panicle Extension Applications (Late Season)

GA_3 4% may be applied at a rate of 3 to 8 fl oz (90 to 240 ml) of product per acre between split-boot and 100% panicle heading to promote main culm and tiller panicle extension. Tank mix with a non-ionic surfactant known to be non-phytotoxic to rice. Timing and dosage is based upon environmental conditions, tank mix combinations with herbicides, and preferred permanent flood practice in relation to rice leaf stage.

NOTE: Do not apply when rice is subjected to drought stress conditions. Foliage may temporarily appear lighter green in color due to accelerated growth rates following GA_3 4% application.

Mixing Instructions

Fill the treatment tank with half of the final tank mix volume. Add the required amount of GA_3 4% and mix thoroughly while adding water to the desired final volume. Dispose of any unused spray material at the end of the day.

Application Equipment

Apply GA_3 4% by aerial or ground spray equipment. As an aerial spray, use a spray system capable of producing a uniform spray pattern of medium to fine spray droplets at 10 gallons per acre (GPA). Apply no less than 3 GPA of total spray volume. Use low-pressure ground sprayers equipped with boom and flat fan nozzles using 10 to 15 GPA spray volume.

Compatibility with Other Chemicals

GA_3 4% can be tank mixed with most commonly used rice herbicides and fungicides. When applying GA_3 4% in mixtures with Arrosolo®, Riverside Propanil® 60DF, Stam® M4, Stam® 80EDF, or Wham! ® EZ, plus one of their recommended adjuvants, use of an additional surfactant is not necessary. Do not apply GA_3 4% with Whip® IEC or Whip® 360.

SEED TREATMENT APPLICATION

Use GA_3 4% as a seed treatment for rice. GA_3 4% stimulates seed germination and promotes faster and more uniform stand establishment. The following table describes GA_3 4% application and expected benefits.

GA_3 4% Seed Treatment Application

Crop	GA_3 4% Use Rates	Important Considerations	Benefits
Rice	0.5 to 2.1 fl oz product in 8-20 fl oz water/100 lbs seed (Equivalent to 15 to 20 ml in 237 to 591 ml water/45 kg seed)	For use with drill or broadcast seeding systems. Do not apply GA_3 4% prior to a 24-hour presoak or to water used for the presoak. Do not exceed 2.1 fl oz product/100 lbs of seed (or 62 ml product/45 kg seed).	May promote germination and emergence for semi-dwarf and tall varieties. May help increase final stand density and uniformity when seed are planted deeper to receive adequate moisture.

Mixing Instructions

GA_3 4% may be applied to seed with standard mist treating equipment. For best results, higher treatment volume of 12 to 20 fl oz per 100 pounds of seed (355 to 591 ml/45 kg seed) ensures complete and uniform coverage.

Fill the treatment tank with half of the final tank mix volume. Add the required amount of GA_3 4% and mix thoroughly while adding water and other co-applied seed treatment products (see Compatibility with Other Chemicals section) to the desired final volume.

Add an approved dye to distinguish GA_3 4% treated seed and prevent inadvertent use for food, feed or oil purposes. Treated seed must be labeled in accordance with the requirements of the Federal Seed Act.

Use Restriction

Do not use treated seed for food, feed or oil purposes.

Compatibility with Other Chemicals

GA_3 4% is compatible with most commonly used fungicide seed treatments (e.g. Vitavax® CT and Dithane®), standard dyes, and sticker/binding agents. When preparing tank mixes, ensure adequate physical compatibility and mixing.

HYBRID RICE SEED PRODUCTION

Apply GA_3 4% during heading to increase panicle height of hybrid rice. This will facilitate pollination and harvest efficiency in the field, thus maximizing potential seed yield.

Timing and Rate Recommendations

For hybrid rice, make 1 to 5 applications of 20 to 100 grams a.i./acre at regular intervals during the heading period to promote main culm and tiller panicle extension, thus helping to maximize flower pollination.

Use Precautions

Avoid drift or accidental application to other crops. Higher rates of GA_3 4% application to hybrid rice plants can result in excessive vegetative growth, thus producing a taller plant that is more prone to lodging.

Compatibility with Other Chemicals

Most commonly used rice herbicides and fungicides are compatible with GA_3 4%. When applying GA_3 4% in mixtures with Arrosolo®, Riverside Propanil® 60DF, Stam® M4, Stam® 80EDF, or Wham!® EZ, plus one of their suggested adjuvants, use of an additional surfactant is not necessary. Do not apply GA_3 4% with Whip® IEC or Whip® 360.

Mixing Instructions

Fill the treatment tank with half of the final tank mix volume. Add the required amount of GA_3 4% and mix thoroughly while adding water to the desired final volume. Dispose of any unused spray material at the end of the day.

Application Equipment

Make aerial applications of GA_3 4% with spray systems capable of producing a uniform spray pattern of medium to fine spray droplets. Apply no less than 3 gallons per acre (GPA) of total spray volume. Use low-pressure ground sprayers equipped with boom and flat fan nozzles using 10 to 15 GPA spray volume.

CONVERSION TABLES

Grams of Gibberellic Acid Per Acre Desired Gibberellic Acid Concentration (Grams Active Ingredient per acre) in Finished Spray	To	**Amount of GA_3 4% Formulation Per Acre** GA_3 4% Liquid Contains Approximately 1.0 Gram Active Ingredient/Fluid Ounce of Formulated Product
0.2		0.2 oz.
0.5		0.5 oz.
1.0		1 oz.
2.0		2 oz.
4.0		4 oz.
5.0		5 oz.
8.0		8 oz.
10.0		10 oz.
12.0		12 oz.
16.0		16 oz.
20.0		20 oz.
25.0		25 oz.
32.0		32 oz.
40.0		40 oz.
48.0		48 oz.
50.0		50 oz.
128.0		128 oz.

ppm (parts per million) GA_3	Milliliters (ml) of GA_3 4% per liter of spray solution	Milliliters (ml) of GA_3 4% per gallon of spray solution	Fl. oz. of GA_3 4% per gallon of spray solution
1	0.03	0.1	0.003
5	0.15	0.6	0.02
10	0.3	1.1	0.04
25	0.74	2.8	0.09
50	1.5	5.6	0.19
100	3.0	11.2	0.4
250	7.4	28.0	0.95
500	14.8	56	1.9
750	22.2	84	2.8
1,000	29.6	112	3.8

LIMITED WARRANTY AND DISCLAIMER

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such use or the results to be obtained if not used in accordance with printed directions and established safe practice. To the extent consistent with applicable law, buyer's exclusive remedy and manufacturer's or seller's exclusive liability for any and all claims, losses, damages or injuries resulting from the use or handling of this product, whether or not based in contract, negligence, strict liability in tort or otherwise shall be limited, at the manufacturer's option to replacement of, or the repayment of the purchase price for, the quantity of product with respect to which damages are claimed.